Missouri Department of Natural Resources

Water Quality Coordinating Committee
Water Protection Program

Minutes

July 20, 2003

WATER QUALITY COORDINATING COMMITTEE

Governor Office Building,
200 Madison Street, Room 470
Jefferson City, Missouri

July 20, 2004
10:00 a.m.

MEETING AGENDA

Hinkson Creek Study - Randy Crawford, DNR, ALPD, Environmental Services Program

Hinkson Creek Watershed Restoration Study - Al Buchanan, Show-Me Clean Streams

Technologies for Urban Erosion Control - Bob Broz, University Outreach & Extension

Other

Agency Activities

Meetings & Conferences

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MINUTES

Attendees:

Becky Shannon	DNR/WPP/Water Pollution Control Br.	Ann Crawford	DNR/WPP/Water Pollution Control Br.
Darlene Schaben	DNR/WPP/Water Pollution Control Br.	Anne Peery	DNR/WPP/Water Pollution Control Br.
Terry Timmons	DNR/WPP/Public Drinking Water Br.	Tim Rielly	MO Dept. of Conservation
Jack Dutra	JD Info Services/Syngenta	Trish Rielly	DNR/Environmental Services Pgm.
Paul Andre	MO Department of Agriculture	Randy Crawford	DNR/Environmental Services Pgm.
Bob Broz	UMC Outreach & Extension	Alan Buchanan	MDC/Hinkson Creek Grant
Dan Downing	UMC Outreach & Extension	Joe Richards	USGS – Water Resources Division
John Lodderhose	St. Louis MSD	Ken Midkiff	Sierra Club
Caitlyn Peel	St. Louis HBA	Robert Brundage	Newman, Comley & Ruth
Angel Kruzen	Water Sentinel, Sierra Club	Scott Hamilton	DNR/WPP/Water Pollution Control Br.
Susan Kleithermes	Lathrop & Gage	Charlie Ducharme	DNR/GSRAD/WRP
Trent Stober	Midwest Env. Consultants	Priscilla Stotts	DNR/WPP/Water Pollution Control Br.
Gayle Unruh	MoDOT	Jennifer Harness	CDM
Joe Engeln	DNR/Office of Director	Royan Teter	EPA Region 7
Steve Mellis	Missouri River Relief	Randy Sarver	DNR/ESP
John Knudsen	DNR/WPP/Water Pollution Control Br.	Phil Schroeder	DNR/WPP/Water Pollution Control Br.

Introductions were made.

Hinkson Creek Study - Randy Crawford, DNR, ALPD, Environmental Services Program
PowerPoint Presentation

Hinkson Creek was placed on the 1998 303(d) list of impaired waters for unspecified/unknown pollutants. The impaired beneficial use was listed as protection of warm water aquatic life. The listed segment begins approximately at the I-70 bridge crossing and extends to the mouth of Perche Creek, which is approximately 14 stream miles. All of the impaired section is in an urbanized portion of Hinkson Creek. Because the stream pollutant was listed as unknown, ESP had to adopt a methodology that would allow them to look for problems that could potentially be a cause. They decided on a triad approach. An Aquatic Community survey indicated an impairment; Toxicity Tests were performed on water samples (to correlate the effects of the lab test organisms with in-stream effects on aquatic community); then using Chemical Analysis, based on results of the Toxicity Identification Evaluation testing an analysis was done for different types of pollutants. Basically, samples were collected from a variety of different habitats; they were analyzed at the lab at a detailed level; then compared them to reference streams. Randy showed a chart with locations of where samples were collected in the Fall 2001 and Spring 2002. Using EPT taxa, Total Taxa, EPT Index, Percent EPT, Biotic Index and Shannon Diversity Index, the samples were scored which allowed them to determine the sustainability of that particular site. This would show if a site were fully supporting of the beneficial use, partially supporting or non-supporting. Another chart was shown comparing locations upstream and downstream. They found that Bonne Femme, which is close by and a stream similar to Hinkson, showed fully supporting in both seasons. Fall 2001 data, with no flow in upstream Hinkson, showed partially supporting. Good communities were found where flow began. This is one reason why they do not depend on upstream and downstream comparisons exclusively but will compare with reference streams. Frequently, there will be an upstream situation with no flow, which has a big factor on the aquatic community. In the fall, they found EPT and total taxa were fairly consistent at the upstream stations; a slight increase occurred at the downstream stations due to an increase of water. Spring

showed a sharp decline of EPT taxa in the upper portion. Total taxa declined substantially. Documentation showed there was an actual impairment. They are finding in urban stream settings that the stonefly is one of the first groups to be effected. The objectives were to find out what types of pollutants were causing the impairment and the sources causing the pollutant. They used Level 4 water quality monitoring volunteers to assist in collecting samples. The volunteers did base flow sampling; department staff did the storm water sampling, identified and looked at a variety of storm water discharges and some sediment analysis. A map was shown of the sampling locations. Various sampling devices were used. A qualitative organic analysis was performed to find the types and sources of pollutants. Microbiology and microtox testing were also done for toxicity. All sediment and water samples collected were subject to microtox testing. Any samples that showed toxicity to microtox were subjected to the Toxicity Identification Evaluation (TIE) procedures. If toxicity is found, the sample is filtered and retested for toxicity. If filtration removed the toxicity, the toxic components are likely to be associated with filterable particles. If addition of a chelating agent, such as EDTA, reduces or eliminates toxicity, there is a strong possibility that ionic metals may be a cause of toxicity. Another example is to pass a sample through a solid phase extraction (C18) column and retest for toxicity. If passage through a C18 column reduces or eliminates toxicity, toxicity may be related to a non-polar organic compound. Randy gave examples of some of the samples they collected. The Wal-Mart/Broadway Market Place drainage sampling showed carbaryl. The MoDOT drainage area showed TPH as waste oil. The I-70 drainage showed no toxicity in the storm water; however, microtox testing showed some toxicity in the sediment. Randy talked about a short list of some of the organic chemicals found in their study. He showed a chart of TIE and toxicity test results after the February 9, 2004, snowmelt. They determined that runoff of ice melting chemicals from the MoDOT parking lot was having effects that could be detected in-stream. Visual sediment estimation surveys were done. They found that Bonne Femme had very low sediment coverage. Upstream Hinkson Creek had some sediment coverage with downstream having a greater amount of sediment coverage.

While working on this study, other factors were contended with, like the city of Columbia upgrading the sewer line system or other construction activity nearby. They learned that the aquatic community is impaired between I-70 and Broadway and extending downstream. Toxicity has been documented in some (16%) of the storm water discharges and in Hinkson Creek at Broadway. TIE manipulations have implicated organic chemicals in some storm water samples and high levels of sodium and calcium chloride in snowmelt samples. *E. coli* counts occasionally exceed recommended levels. (The city was notified.) A visual sediment survey has documented increased sediment in the impaired segment of Hinkson Creek compared to upstream estimates. Observations of land disturbance and erosion support that view.

From the study they have recommended to improve storage and handling of road materials to minimize runoff and prevent movement off site. (MoDOT agreed to work on this.) More and better designed storm water control structures (e.g., sediment basins) that would slow and disperse the flow of storm water into the creek and reduce scouring and soil erosion. Concerted effort to utilize BMPs to minimize soil erosion when conducting land activities. Better parking lot management (street-sweeping, improved storage and containment of lawn and garden chemicals, etc.) to minimize pollutant export into Hinkson Creek. Further investigation into sources of the *E. coli* levels between I-70 and Broadway. Strive to maintain or increase the existing riparian corridor (buffer zone) wherever possible. (They have talked with different groups and stressed that the responsibility lies with everyone.) Further investigate the hydrologic changes that have occurred in Hinkson Creek. Randy said the next segment of the study is from Broadway through Providence as well as the previous areas. They will use data loggers to check temperature and dissolved oxygen readings. Randy felt the study would show other contributors to the problems downstream.

A question was asked about whether this approach would be used on other 303(d) listed streams where the pollutant was listed as unknown, Wilson's Creek for instance. Randy didn't know if funding would be available. But they recommended to the city of Springfield that they take an investigative approach in their storm water monitoring programs to identify those locations.

The *E. coli* samples were grab samples. They found that during rising water there were higher coliforms every where; during low water times they occasionally found spikes, which could be from the upgrading of the sewer system, locations which are not yet connected to the sewer system, or homeless people.

Randy said one of the bigger problems is the education process on the difference between *E. coli* and fecal coliform.

Trish Rielly also responded to questions as she was a big part of the study.

Hinkson Creek Watershed Restoration Study - Al Buchanan, Show-Me Clean Streams
Overheads; Handout: Hinkson Creek Restoration Project Subgrant to Show-Me Clean Streams

This Hinkson Creek Restoration project was part of the competitive process for Section 319 funding. The project amount is $686,922 for the project period of June 1, 2004 through May 31, 2008. Partners include NRCS, MDC, City of Columbia, Boone County, Boone County SWCD, Greenbelt Coalition, Watershed Committee of the Ozarks, Hickman High School & West Junior High, Sierra Club and Citizens Watershed Committee. Al is the project manager. Some of the objectives of the project are to develop a watershed management plan, initiate two conservation developments (demonstration areas) through the approval process by the Columbia City Council and Boone County Commission, plant 20 acres of trees in riparian areas, stabilize 1500 feet of stream bank, 40 homeowners to participate in the Show-Me Yards & Neighborhoods Program, establish 20 rain gardens, and improve knowledge of watershed issues and facts by at least 25% in the development and media communities. Al felt the biggest challenge would be setting up a way to show the impact at the end of the project. A Steering Committee will be formed and will provide guidance for the project, coordinate communication between partners and support watershed restoration activities. An annual newsletter will be distributed. Two media workshops (1st & 3rd years) and Conservation Development Workshops (2nd & 4th years) will be held as well as four demonstration field days and Rain Garden Landscaping Workshops. Al said they were going to partner with the Bonne Femme Creek Watershed developer's workshop this fall. John Knudsen commented that the Hinkson Creek Watershed project and the Bonne Femme Watershed project are very similar in their goals and deal with some of the same issues and are going to complement each other. The Bonne Femme Watershed project was started last year.

The Hinkson Creek project will provide cost-share for watershed residents and developers to stabilize stream banks, install rain gardens and establish BMPs in conservation developments. Match for the project will partially come from landowners, stream teams and developers.

Al went over the first year objectives of this project. He mentioned that this is a multi-task project so it will be important to keep all objectives going at the same time and initiated to accomplish the goals.

The geographic area for this project is in the lower part of the watershed. An AgNPS SALT project is on-going in the upper part. A question was asked about a mosquito problem with the rain gardens. Al said this would be included in the education when the rain gardens are established. It was felt that this project would be a huge success.

Technologies for Urban Erosion Control - Bob Broz, University Outreach & Extension
PowerPoint Presentation; Handout: MU Guide – Controlling Runoff & Erosion at Urban Construction Sites

Bob said that Charlie Rabeni did a study on streams talking about types of soil particles and size and how long they stayed suspended. Bob passed around two jars of water containing clay with one including polyacrylamide (PAM). The handout contains information on issues dealt with on how to control runoff and erosion on urban construction sites. This was funded through a 319 project with assistance from the Homebuilders Association from Columbia and the City of Columbia. The University of Missouri had some sites where they used PAM.

(There are over 120 products of PAM so you need to make sure the product will do what you need.) PAM has already been used for some time in agriculture and by the federal government and other states. They monitored for soil erosion on the sites for 40 days. During this time, they received over 6.5 inches of rain. Comparing (2% slope) the site using dry PAM to an untreated site, the site with PAM showed less runoff on the sidewalk. They also used Aqueous PAM. Again, after a rain, the untreated site showed more runoff. PAM applied with gypsum on a 6-8% slope showed some sediment runoff although the water running off the site was almost clear. With PAM applied over straw, there still appeared to be less runoff than on an untreated site. In summary, PAM works very well in some applications. They found that it is not a stand-alone product. The Home Builders Association asked them to look at the economics of using the product. The University staff found there was less clean up on the sidewalks and less work to reestablish grass. The cost estimate was approximately $4.00/lb. at 12 lbs./acre. They found that PAM is a good form of erosion control in many situations, is cost effective in applicable situations, can be easily applied in conjunction with other BMPs and are best used with other BMPs.

The water in the jar containing the PAM was much clearer. It was mentioned that Idaho has been using PAM routinely for several years now. The International Erosion Control Association has a listing of recommended products. Different rules apply for different states. PAM is applied when finishing a site to help prevent soil erosion and establish grasses.

Other

Becky said the 319 grant review meeting for FY04 projects will be held on August 17 and 18. Therefore, a notice will sent on whether the August 17 WQCC meeting will be canceled.

Phil Schroeder updated the group on the status of the Water Quality Standards. It has officially entered the first phase of rulemaking. It goes through the Inter-agency coordination effort for a 30-day period to solicit comments before filing with the Secretary of State. It generally takes 30 days before it's published in the Missouri Register. They anticipate having an extended public comment period until at least the end of the year.

Phil said the UAA Protocol has been sent out to stakeholders for further comment. They hope to get this to the Clean Water Commission at their August 4 meeting. Phil mentioned that if they plan to do any UAAs this year the protocol would need to go to the Commission in August.

The Water Classification Guidelines will also be presented to the Commission at the August meeting. These were sent to stakeholders but have not received any comments.

Agency Activities

Ken Midkiff said they have gone to several counties and are looking at sand and gravel operations and sites as they would impact water quality in streams. What they found hasn't been good. Those complaints have been filed with the Land Reclamation Commission. Reactions have been mixed.

Joe Richards said the USGS has been working on TMDL monitoring in Springfield and Eminence and in Joplin starting in August on the Elk River.

Al Buchanan said that as his role of President of the American Fisheries Society he had been testifying to the legislators this last year on gravel mining.

Tim Rielly invited the group to attend the Stream Team program's Meramec Watershed Association's annual picnic on Saturday, July 24, at Meramec State Park.

Anne Peery said the Manacle Creek TMDL on abandoned mine land areas in Callaway County has been approved. McKenzie Creek TMDL is being prepared for submittal. Two more, Little Otter Creek and Trace Creek, are scheduled to be on public notice by the end of the month. Stay tuned for those.
John Knudsen updated the group on the EPA's Target Watershed Grant, formerly known as the Watershed Initiative Grant. The three submitted from Missouri were not approved. Becky mentioned that the President's budget requested more funding for this grant program for next year. Congress still needs to approve this. Dan mentioned that one group that submitted an application is continuing to meet and get ready for the next year's submittal. Becky cautioned that EPA has been very particular with how the application is submitted and suggested following every criteria very closely and to remember that the focus may change.

Angel Kruzen mentioned the Missouri Watershed Coalition would meet on Sunday, July 25. They are still working on the TMDL on the Jack's Fork. August 7 is the Scenic River Stream Team Association's picnic.

Royan Teter updated the group on the Water Quality Standards lawsuit. The second to last set of briefs were filed July 19. The last briefs are due July 28. Settlement discussions are still on-going.

Bob Broz handed out the brochure for the North Fork Project's Watersheds Concepts and Curriculum Review being held August 2-6. College credit hours are being offered. On July 29 & 30, there is a conference in Earth City called Future of Grass in Urban Areas. Some subjects include Phase II storm water regulations and urban erosion control issues.

Jack Dutra mentioned a meeting in Herndon, Virginia, on September 14-15, with Dept. of Interior, NOA, EPA, Dept. of Ag and Tennessee Valley to talk about federal water programs and to coordinate data and work with national Water Quality Monitoring Council on future needs for 2005 and onward.

Scott Hamilton mentioned that there are two public notices out for public comment from the Corps of Engineers on Hinkson Creek for 404 permits for two more developments around the Providence and Nifong area.

Priscilla Stotts said she is on the planning committee for the first annual Clean Water Celebration in St. Louis, October 15-16. October 16 is World-Wide Monitoring Day. Contact Priscilla if anyone is interested in setting up an exhibit or in helping.

Becky reported on the Watershed Working Lands Summit conference she attended in St. Louis. Staff from the 4 states in Region 7, EPA, Dept. of Ag, NRCS, and environmental agencies got together to talk about ways to collaborate, cooperate and communicate better to achieve their goals. Bob Broz also attended and felt too that it was the WQCC group and other similar venues for coordination has helped to ensure Missouri agencies are working together. There is always room for improvement but it seemed that Missouri was further along than other states.

Becky mentioned that the Source Water Protection Guidelines presented by Frank McDaniels at an earlier meeting is now on MoWIN's web site at http://outreach.missouri.edu/mowin/Trainingswpp/swpps.html.

Meetings & Conferences

August	2-6	North Fork Project's "Watersheds Concepts and Curriculum Review," Stoutsville
October	15-16	Clean Water Celebration, St. Louis
	16	World Wide Monitoring Day